MIRCOM®
Advanced Life Safety Solutions

FA-262

Fire Alarm Control Panel

Installation and Operator's Manual

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1.0 Introduction

1.1 The FA-262 Fire Alarm Control Unit

General features

- Two initiating device circuits, class B / style B
- Two notification appliance circuits, class B / style Y (Power Limited) [can be wired as one NAC, class A / style Z]
- One common alarm-actuated relay, form 'C'
- One common trouble-actuated relay, form 'C'
- AUX+ power output, 500 mA max. (Power Limited)
- Unswitched common and switched common auxiliary power returns
- Integral battery charger
- Cabinet with dead-front construction
- Transformer, mounted in the cabinet

Applications

The FA-262 two zone, fire alarm control panel is listed for use in the following applications.

- Protected Premises Fire Alarm System
- And for the following types of service:
  A – automatic, M – Manual, SS – Sprinkler Supervisory, WF – Waterflow

1.2 Codes, Standards and Installation Requirements

Relevant codes and standards

The FA-262 fire alarm control panel is designed to meet the requirements of NFPA 72, 2002 edition, UL 864 Rev 9, Control Units for Fire Protective Systems, and in Canada, CAN/ULC-S527-99, Standard for Control Units for Fire Alarm Systems.

Information provided with this unit is intended as a guide. Installation of this equipment, optional system components, alarm initiating devices and notification appliances must follow the manufacturer's guidelines as contained in their respective installation documents, all applicable codes and the instructions of the Local Authority Having Jurisdiction.

General Installation requirements

Manufacturer's documents

When installing the FA-262 control panel, refer to this manual. When installing optional system components refer to the installation documents included with those components. When installing compatible alarm initiating devices or notification appliances, refer to the installation documents included with those products.

Field wiring

Field wiring recommendations in this document are intended as guidelines. All field wiring must be installed in accordance with NFPA 70 National Electrical Code and in Canada with the standard for installation ULC/S 524, the most current Canadian Electrical Code, with all relevant local codes and standards, and the Authority Having Jurisdiction.

Compatible devices

Use UL or ULC Listed smoke detectors and notification appliances that are compatible with the FA-262 Fire alarm control panel from the lists included in this manual.

1.3 Technical Support and General Information

For technical support call 1-888-660-4655, or email techsupport@mircom.com.

For general product information visit the Mircom web site: **www.mircom.com.**

1.4 System Verification

The complete fire alarm system must be verified for proper installation and operation when:

- the initial installation is ready for inspection by the Local Authority Having Jurisdiction;
- any system component is added, changed or deleted;
- any programming changes are made;
- system wiring has been altered or repaired;
- system failure due to external influences such as lightning, water damage or extended power outages has occurred.

1.5 Standby Power

The FA-262 provides standby battery support for lead-acid rechargeable batteries. The required capacity of the standby batteries must be calculated using the charts and tables within this manual for the period as required by national or local codes and standards. Even though the calculation table within this manual includes a safety margin, lead-acid batteries commonly used for standby can have variable capacity as a result of age and ambient conditions. Periodic inspection for damage and the batteries' ability to support the attached equipment is highly recommended.

1.6 Battery Maintenance

The two 12V sealed lead-acid batteries should be replaced after each period of 3 to 5 years of normal service. If the Battery Trouble indicator activates, obtain required service.

2.0 Preparing to Install the FA-262 Fire Panel

2.1 Unpacking the FA-262

The basic FA-262 package includes the following components:

- •Cabinet with hinged door
- •Display and control plate c/w display and control printed circuit board.
- •Zone label insert
- •Battery compartment dead front plate
- •Main control PCB
- •Transformer
- •Installation manual
- •Hardware pack
  - -- 2 × NAC EOL resistors (4.7 K, 5%, ½ W)
  - -- 2 × Zone EOL resistors (4.7 K, 5%, ½ W)
  - -- 1 × Battery jumper wire
  - -- 1 × EGND terminal ring
  - -- 1 × EGND KEP nut
- Door keys (taped to outside of cabinet)

All components described above are factory assembled into the enclosure.

2.2 Optional Accessories

Model Number	Name	Description
RM-263	Relay module	Provides 3 relays that are jumper programmable to activate on common 'alarm', 'supervisory' or 'trouble'. Mounts inside the enclosure and plugs into the main board.
UDACT-286	Dual line dialer	Communicates all alarms, supervisory and trouble conditions to a Central Station using Contact ID, SIA or 10/20 BPS communication formats. Programmable using the MR-2844 handheld programmer. Mounts inside the enclosure and connects to the main panel using a supplied 4-wire cable with connector.
MR-2844	Programmer	Handheld programmer for the UDACT-286 DACT.
RTI-265	Remote trouble indicator	Single gang plate complete with common trouble buzzer, trouble visual indicator, 'AC on' visual indicator and a trouble silence / lamp test switch. Mounts remotely to a single gang electrical box and is connected to the main panel via the 4-wire 'secur-bus'.
RAM-265	Remote trouble indicator and alarm indicator	Two gang plate complete with common trouble buzzer, trouble visual indicator, 'AC on' visual indicator and a trouble silence / lamp test switch and red zone alarm visual indicators and yellow zone supervisory indictors. Mounts to a standard 2 gang electrical box and is connected to the panel via the 4-wire 'secur-bus'.

2.3 FA-262 Overview

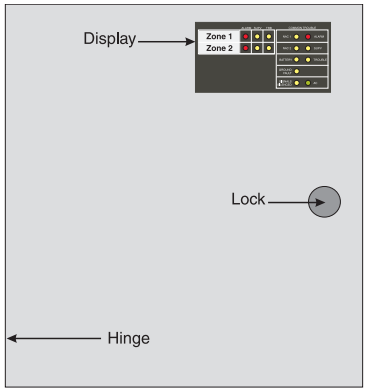


Figure 1: FA-262 cabinet with door closed

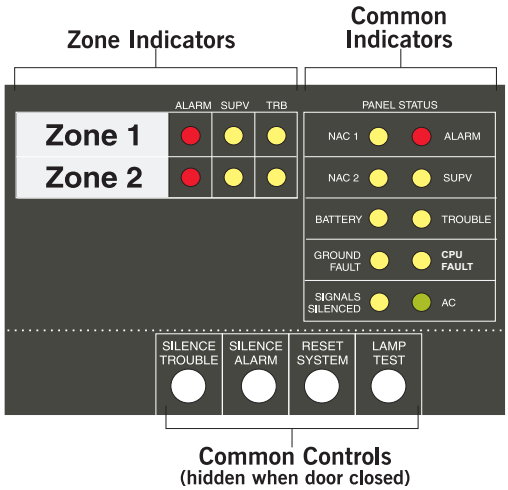


Figure 2: FA-262 display and controls

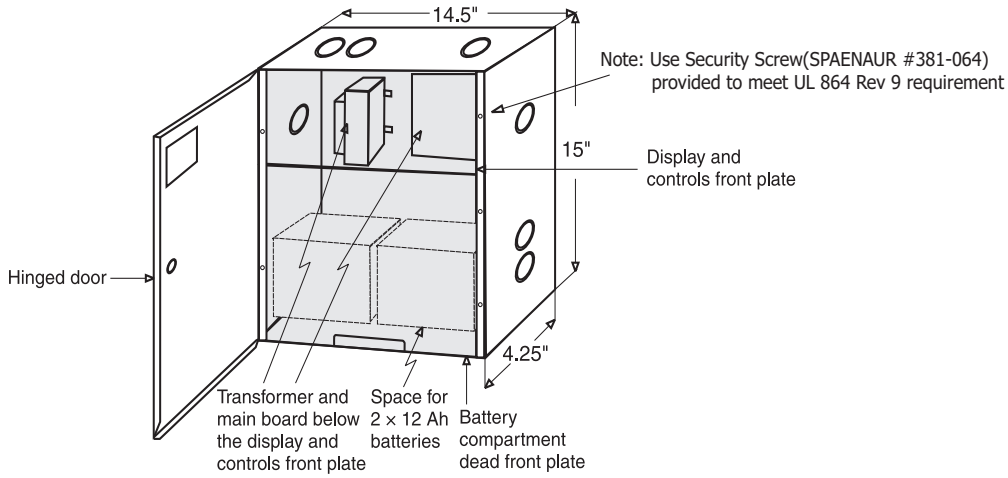


Figure 3: FA-262 Cabinet Overview

Zone Label Insert

A zone label insert is installed in the zone window area. Reach behind the display/control panel and remove the blank insert. Zone designations can be written directly on the insert or can be created using Word for Windows, printed on Avery label #5167 and applied to the insert.

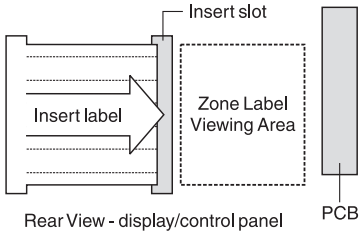


Figure 4: Zone Label Insert

2.4 Planning Your Installation

Note: This system should be installed and serviced by qualified fire alarm installation professionals.

As a minimum, the following points should be considered to ensure that the installation will be successful and proceed without delay.

- Consult with your local AHJ to ensure that the overall system will meet all requirements. Have your plans reviewed and approved as required.
- Review the electrical specifications, mounting and wiring instructions in this manual and in the manuals of all connected modules and devices.
- Using the chart in this manual, calculate the standby battery size that will meet the standby time required. Include all components that will draw current from the standby battery when the panel is in the 'standby' mode.
- Determine the location of the control panel, all initiating and indicating devices and remote modules and mark them on your system layout plan. An indicating device must be located in close proximity to the control panel.
- Using the charts in this manual, determine the wire gauge and wire run distances for the connected components. (initiating devices, indicating devices and 'secur-bus' connected components.)
- Review the programming section of this manual and determine the operating characteristics required of the initiating zones, indicating zones and common panel features.

2.5 Electrical Specifications

Circuit	Rating
Primary AC	120 volts, 60 Hz. 1.5 Amps maximum/240 volts, 50 Hz. 1.0 Amps maximum
AUX+	500 mA maximum ~ Restoral of Aux Power Shorts requires removal of all Aux Power loading
SCOM	500 mA maximum (current sink)
COM	500 mA maximum (current sink)
Relays (common alarm & trouble)	Form 'C' contact, 2 Amp, 30 VDC resistive, power limited source
NAC Outputs	24 volts, full-wave rectified DC, 1.5 Amps max. – Power limited. (3.0 Amps total for both NAC circuits) EOLR – 4.7K ohm, ½ W, 5%
Initiating Zone Inputs	24 VDC, 60 mA max.(in alarm) – Supervisory current: 6.0 mA – max. Loop resistance: 100 ohms max. – EOLR: 4.7 K ohm, ½ W, 5%
Battery Charging Current	270mA maximum
Low Battery Trouble	Low Battery Trouble: 22.0 VDC Low Battery Trouble Restore: 23.0 VDC Critical Shutdown: 19±0.5 VDC

2.6 Module Current Ratings

Module	Standby Current (mA) DC	Alarm Current (mA) DC	Max. Alarm Current (mA) DC
FA-262Control panel	90	425(*)	485
RTI-265 Remote trouble indicator	15	15	15
RAM-265 R.T.I. and remote 5 zone annunciator	15	20(*)	40
UDACT-286 DACT	45	60	60
RM-263 Relay module(**)	0	24	24

Note: *Current noted assumes ONE initiating zone is in alarm. The "Max. Alarm Current" assumes all zones are in alarm.

**Values shown are for all relays set for activation on 'Alarm'. Each relay set for activation on 'trouble' is normally energized and on 'AC fail' will draw 0 mA.

2.7 Standby Battery calculation chart

All components that draw current from the panel while it is in the 'standby' mode (AC OFF) must be considered for the standby battery calculation. All components that draw current while in the 'Alarm' mode must be considered for the alarm battery calculation.

1. The control panel will always draw the currents as shown in the chart.
2. Typically the alarm current is calculated assuming only one initiating zone is in alarm. If it is required that more than one zone be considered, add 60 mA per zone in the Alarm column. Consult the smoke detector manufacture's installation sheet to determine the standby current of these devices. Write that number in the 'current per device' column then multiply that number by the number of devices on the zone. Repeat for each zone.
3. Consult the Notification Appliance installation sheet to determine the current draw for each device connected to the NAC. For each NAC, calculate the total current in alarm and put that number (mA) in the 'Alarm' column.

Note: Each NAC can supply 1.5 Amps max.

4. For each added module in the system, multiply the number of modules times the module 'standby' and 'alarm' currents and write those totals in the 'standby' and 'alarm' columns.
5. Add up all the current drawn from the AUX+ output in the standby and alarm mode and put those totals in the 'standby' and 'alarm' columns.
6. Add up all the currents in the 'standby' column and the 'Alarm' column.
7. Convert the 'standby' and 'alarm' currents from mA to Amps. (divide mA by 1000)
8. Write in the 'standby' time required. (24 or 60 Hr.)
9. Multiply the 'standby' Amps times the 'standby' time to get the 'standby' Amp-Hr. required.
10. Write in the 'alarm' time required in hours. (5 min. =.08 Hr.; 30 min. =0.5 Hr.)
11. Multiply the 'alarm' Amps times the 'alarm' time to get the 'alarm' Amp-Hr required.
12. Add the 'standby' Amp-Hr. to the 'alarm' Amp-Hr. for the total Amp-Hr. required.
13. Multiply the total Amp-Hr. times 1.20 for the **minimum Amp-Hr. battery required** to support the system for the selected 'standby time and the selected 'alarm' time.

2.8 Calculation for Standby Battery Requirement

Step	Device		Current per device (mA)		Number of device		Total Standby Current (mA)	Total Alarm Current (mA)
1	FA-262	Standby:	90	x	1	=	90	
		Alarm:	365	x	1	=		
	Zone 1	Standby:		x		=		
		Alarm:	69	x	1	=		69
	Zone 2	Standby:		x		=		
		Alarm:	69	x	1	=		
3	NAC 1	Alarm:		x				
2	NAC 2	Alarm:		x				
4	RTI-265	Standby:	15	x				
		Alarm:	15	x				
	RAM-265	Standby:	15	x				
		Alarm:	25	x				
	UDACT-286	Standby:	45	x				
		Alarm:	60	x				
	RM-263	Standby:	0	x		=		
		Alarm:	24	x				
5	AUX+	Standby:		x		=		
		Alarm:		x		=		
6	Total 'standby' and 'alarm' current:						mA	mA
7	Divide 'standby' mA and 'alarm' mA by 1000:						Amp	Amp
8	Select 'standby' time required (24 or 60 Hr.):						Hr.	
9	Standby Amp-Hr. - multiply 8 × 7 = (Amps × Hr.):							Amp-Hr.
10	Select 'alarm' time required (0.08 or 0.5):							Hr.
11	Alarm Amp-Hr. - multiply 7 × 10 = (Amps × Hr.):							Amp-Hr.
12	Total Amp-Hr = standby Amp-Hr (9) + alarm Amp-Hr. (11):							Amp-Hr.
13	Multiply the total Amp-Hr. by the safety margin:						1.20	
14	Total battery Amp-Hr required to support the system:							**Amp-Hr.**

Note: Select a battery with an Amp-Hr. rating that is equal to or larger than the calculated minimum Amp-Hr. battery required.

3.0 Installing the FA-262 Fire Panel

3.1 Environmental Specifications

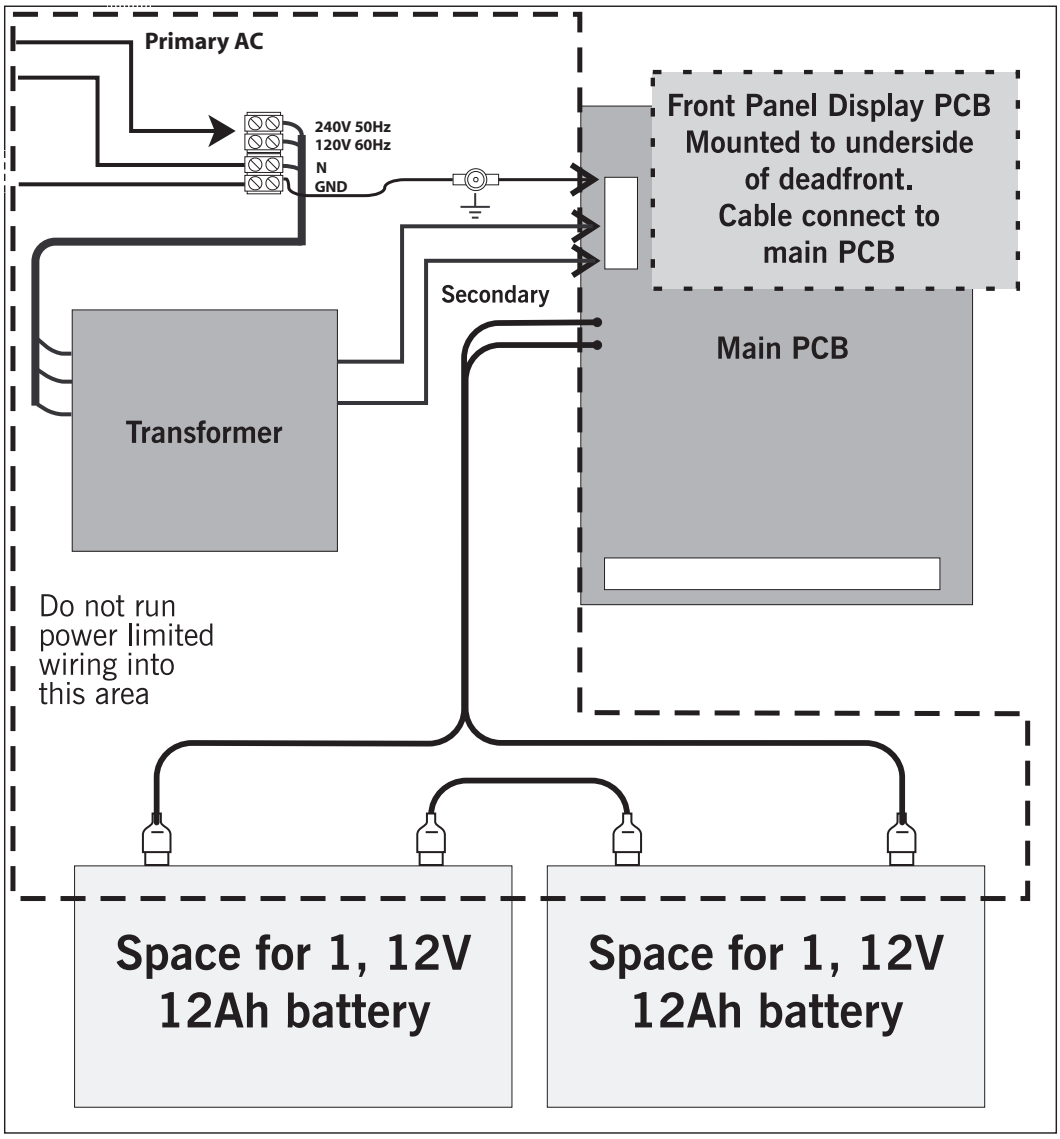
Consider the following conditions when selecting a mounting location for the FA-262 panel:

- Operating temperature: 32°F to 122°F / 0°C to 50°C
- Humidity: 95% RH non-condensing
- Close to a source of unswitched AC power

3.2 Panel Assembly and Modules Locations

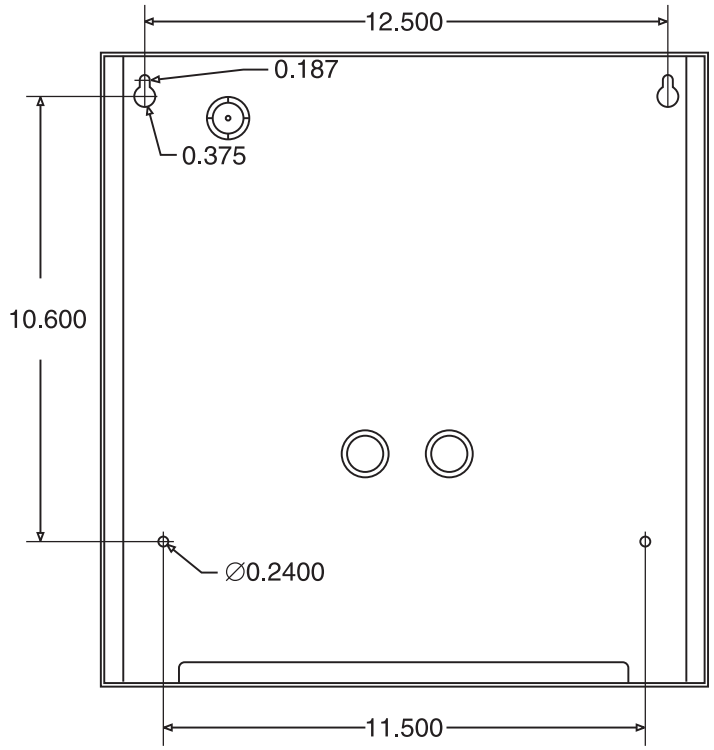
The panel comes completely assembled from the factory. Remove the lower dead front for access to the battery compartment. Remove display control panel for access to AC connections.

Figure 5: Panel Assembly and Modules Locations



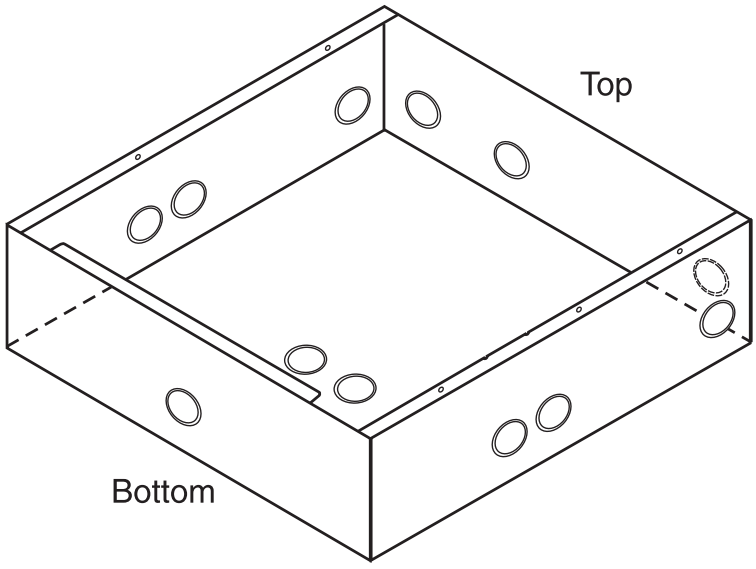
3.3 Mounting the FA-262

Figure 6: Mounting Dimensions



Dimensions in inches

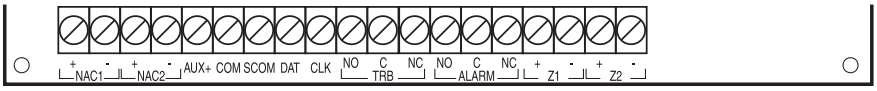
Figure 7: Knockout Locations



4.0 Wiring the FA-262

4.1 Wiring Specifications

Figure 8: FA-262 Terminal Descriptions



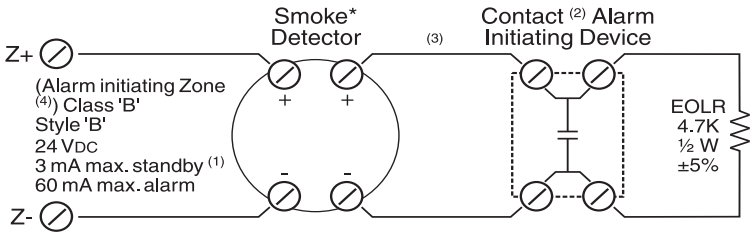
Terminal Label	Description
NAC 1 (+, –)	**Notification Appliance Circuit # 1** 24 VDC, Full-Wave Rectified voltage, 1.5 Amps max. Programmable as Steady or Temporal output on alarm. Supervised for opens, shorts and ground fault. Power limited.
NAC 2 (+, –)	**Notification Appliance Circuit # 2** 24 VDC, Full-Wave Rectified voltage, 1.5 Amps max. Programmable as Steady or Temporal output on alarm. Supervised for opens, shorts and ground fault. Power limited
AUX+	**Auxiliary power output** 24 VDC, filtered and regulated, 500 mA max., 400 mV P-P ripple, power limited. Aux power shorts must be restored by removing all Aux Power loading.
COM	**Auxiliary common power return,** unswitched 24 VDC, 500 mA max.
SCOM	**Auxiliary common power return, switched** (open circuit on system reset or on 4-wire smoke detector reset) 24 VDC, 500 mA max. (Please refer to Appendix A for compatible 4-wire smoke detectors.)
DAT	**Data line for remote module communications**
CLK	**Clock line for remote module communications**
TRB NO	**Common Trouble relay, Normally Open contact**
TRB C	**Common Trouble relay, Common contact**
TRB NC	**Common Trouble relay, Normally Closed contact** The Common Trouble relay is normally energized and is de-energized on trouble. Contacts are shown in the de-energized state. Contacts are rated 30 VDC, 2 Amps.
ALM NO	**Common Alarm relay, Normally Open contact**
ALM C	**Common Alarm relay, Common contact**

Terminal Label	Description
ALM NC	**Common Alarm relay, Normally Closed contact** The Common Alarm relay is normally de-energized. Contact is shown in the de-energized state. Contacts are rated 30 VDC, 2 Amps max.
Z1+	**Zone 1 positive input**
Z1-	**Zone 1 negative input** Zone output is 24 VDC nominal to power 2-wire smoke detectors. Maximum current draw is 60 mA in alarm and is limited by the zone circuitry. Zones may be configured to monitor both 2-wire smoke detectors and initiating devices that employ dry contacts. (manual stations & heat detectors)
Z2+	Same as zone 1 positive
Z2-	Same as zone 1 negative

Note: For each supervised installation wire, a separate terminal must be used.

Figure 9: Connecting 2-Wire Alarm Initiating Devices

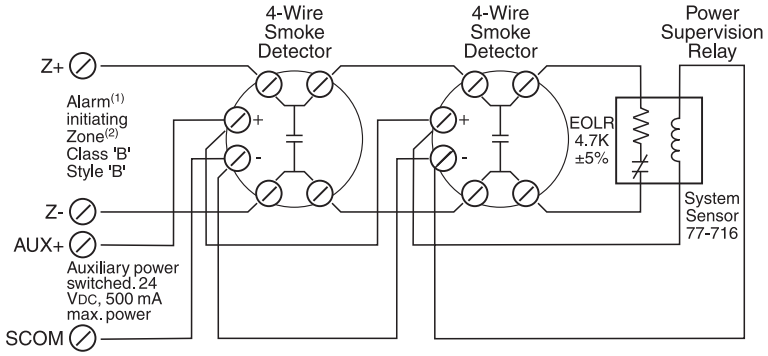
Typical



* See "9.0 Appendix: Table of Compatible Smoke Detectors" on page 33 in this manual for a list of compatible 2-wire smoke detectors

1. Maximum 30 smoke detectors per zone (100 µA each standby).
2. Manual station, heat detector.
3. Maximum total loop wire resistance = 100 ohms.
4. Program zone as:
   Type 1 - Smoke and contact devices instant alarm (default)
   Type 2 - Smoke auto-verify and contact as instant.

Figure 10: Connecting 4-Wire Smoke Detectors



1. Program as zone type 01, instant alarm.
2. Maximum total loop wire resistance is 100 ohms.

Zone Wiring Chart:

Wire (Gauge)	Distance (feet)	Distance (meters)	
18	7,690	2,345	Maximum loop resistance is 100 ohms. Maximum current in alarm is 60 mA.
16	12,195	3,717	
14	19,230	5,861	

4.2 Connecting NAC Devices (Class 'A' and Class 'B')

Figure 11: Connecting NAC Devices (Class 'B')

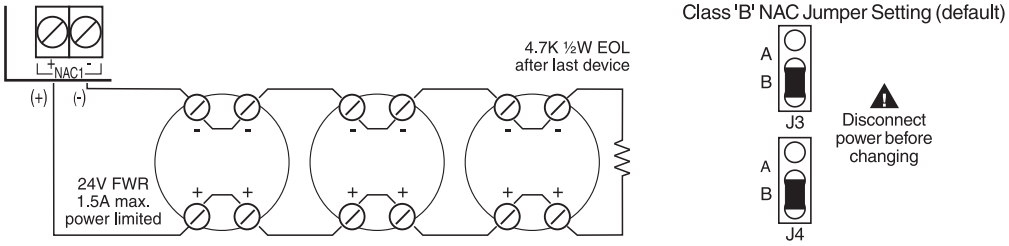
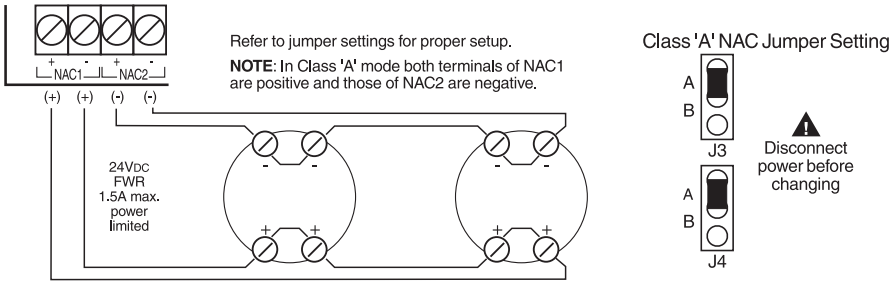


Figure 12: Connecting NAC Devices (Class 'A')



NAC Wiring Chart

Maximum Total Loop (ohms)	Maximum Current (A)	18-Awg Wire		16-Awg Wire		14-Awg Wire		12-Awg Wire	
		ft	m	ft	m	ft	m	ft	m
8.00	0.25	615	188	978	297	1,538	469	2,500	762
5.00	0.50	308	94	488	149	769	235	1,250	381
2.70	0.75	205	63	325	99	513	156	833	254
2.00	1.00	154	47	244	74	385	117	625	191
1.60	1.25	123	38	195	59	308	94	500	152
1.30	1.50	103	31	163	50	256	78	417	127
Note: This chart is based on a minimum source voltage of 22 volts and a maximum line loss of 2 volts thus leaving a minimum of 20 volts at the last notification appliance.									

Figure 13: Connecting Batteries

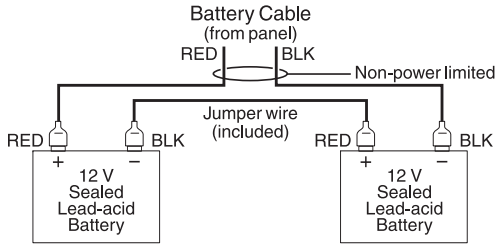
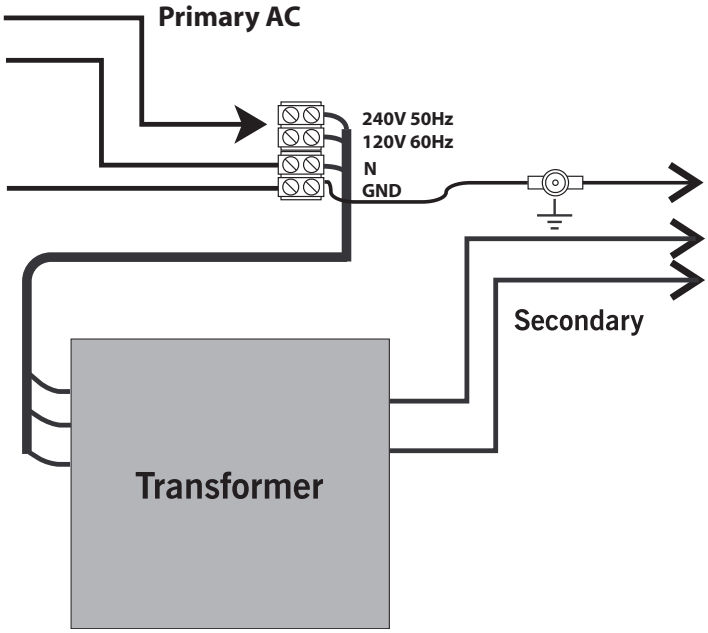


Figure 14: Connecting AC Power



Note: The wire gauges must be no less then the size required by the Canadian Electrical Code C22.1, Part 1, Section 32.

Figure 15: Connecting the Alarm and Trouble Relays

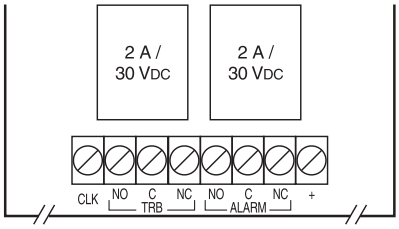
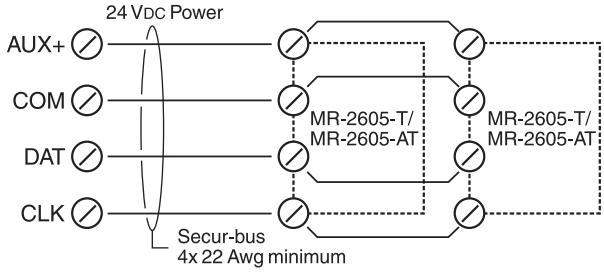


Figure 16: Connecting Optional Devices

See installation sheets for the remote devices for detailed wiring and address setup.

1. Maximum of 4 MR-2605-T per panel.
2. Maximum of 4 MR-2605-AT per panel.



Secur-bus Wiring Chart

Current (mA)*	22-awg Wire		18-awg Wire		16-awg Wire		14-awg Wire	
	ft	ft	ft	m	ft	m	ft	m
15	2,524	769	6,410	1,954	10,160	3,098	16,000	4,878
30	1,262	384	3,200	976	5,080	1,549	8,000	2,439
45	842	256	2,135	651	3,385	1,032	5,340	1,628
60	631	192	1,600	488	2,540	774	4,000	1,220
75	505	154	1,280	390	2,030	619	3,200	976
90	421	128	1,065	325	1,690	515	2,670	814
105	361	110	915	279	1,450	442	2,285	697
120	315	96	800	244	1,270	387	2,000	610
135	281	86	710	216	1,125	343	1,780	543
150	252	77	640	195	1,015	309	1,600	488
165	229	70	580	177	920	280	1,455	444
180	210	64	530	162	845	258	1,335	407
195	194	59	490	149	780	238	1,230	375
210	180	55	455	139	725	221	1,145	349
225	168	51	425	130	675	206	1,065	325
*See module current ratings chart for current drawn by each module attached to the secur-bus.								

To calculate the wire run distance for any gauge wire and any maximum current value, use the following formula:

$$\text{Remix} = \frac{1.25}{\text{Immix Amps}} \text{ ohms}$$

$$\text{Distance} = \frac{\text{Remix} \times 1{,}000}{2(\text{wire resistance in ohms per 1,000 feet})} \text{ feet}$$

Secur-bus Capacitance

Maximum wire capacitance for proper operation of the Secur-bus is 90 nF (nanofarad). Typical wire capacitance for 22 awg quad cable is 20 nF per 1,000 feet. Thus, for 22 awg quad cable, the maximum wire run distance is ((90/20)× 1,000) = **4,500 feet**. Other types of wire have different capacitance values. Consult the wire manufacturer's data sheets for typical capacitance values.

Note: Shielded wire has a much higher capacitance value and distances are severely reduced.

The following devices may be connected to the Secur-bus. All devices are supervised. See section for adding and deleting devices on the Secur-bus.

Devices	Description
MR-2605-T	External to control panel. Up to 4 of each device may be connected.
MR-2605-AT	
MR-2806	Mounted inside control panel. See diagram in "3.3 Mounting the FA-262" on page 9.

1. Do not run the Secur-bus adjacent to sources of high transient noise such as AC wiring, telephone cable bundles or computer wiring.
2. If the Secure-bus must go through a high transient area, use shielded cable.
3. If shielded cable is used, the distances in the chart above are cut in half.

5.0 Panel Operation

5.1 Operating Sequences

This section describes how the panel functions under various conditions. The choices you make in panel programming will also affect how the panel operates. Please see for information on how to program the panel, and descriptions of each of the programming options.

5.2 General Zone Fire Alarms

Zone alarms have priority over all other annunciation. When an alarm occurs, the following happens:

•The corresponding zone alarm LED begins flashing, the common alarm LED turns on steady, and the alarm relay turns on.

•If a trouble was present on that zone then the zone trouble LED turns off. If the trouble buzzer is audible then it also turns off.

•The NACs sound in a steady or temporal pattern, depending on the option selected (see "NAC Temporal/ Steady Programming - Section 1 ('NAC1' LED on steady)" on page 25).

•If enabled, the silence inhibit timer begins counting down (see "Signal Silence Inhibit Timer" on page 26). If the silence inhibit timer is enabled, the panel cannot be silenced for 60 seconds following the first fire alarm. Subsequent fire alarms do not restart or extend this timer. While the signal silence inhibit timer is counting down, if the Silence Alarm button is pressed the panel will sound a 1 second 'error tone' on the common trouble buzzer.

•The NACs remain on until silenced with the Silence Alarm button, or if the automatic alarm silence is enabled, until the thirty minute bell timer runs out (see "Automatic Signal Silence" on page 25). If the automatic silence timer is enabled, the panel will automatically silence the NACs 30 minutes after the **last** fire alarm. Each zone alarm will restart the timer, giving a full 30 minutes after the last alarm before the NACs are silenced.

- Once the NACs are silenced the signals silenced LED turns on and any flashing zone alarm LEDs turn on steady. The common trouble LED and trouble relay also turn on and, if the NACs have been silenced *automatically*, the buzzer will sound at a rate of ½ second ON/OFF.

Note: A manual signal silence will not initiate the trouble buzzer. Only the common trouble LED and signals silenced LED are turned on.

•Any additional zone alarms that occur while the panel is in alarm will reset the auto alarm silence timer and turn on the NACs, but the panel will not restart the 60 second silence inhibit timer.

•The zone alarm LEDs, common alarm LED and alarm relay will remain on steady until a system reset is performed.

5.3 Waterflow Alarms

If the Waterflow Silence option is turned off (see "Silence Waterflow Alarms" on page 26), when a waterflow zone (type 03) initiates an alarm the NACs cannot be silenced until all waterflow zones are returned to normal. If all waterflow zones return to normal after the 30 minute automatic signal silence timer has expired, then the panel will silence the NACs.

If the Waterflow Silence option is turned on, then an alarm on a waterflow zone is treated like any other fire alarm.

Waterflow alarms may be delayed by 60 seconds to prevent false alarms from surges in the sprinkler system. The delay is common to all zones programmed as 'waterflow', type 03 zones. If the delay is not used, all waterflow alarms will be instant.

5.4 Supervisory Zone Alarms

When an alarm occurs on a supervisory zone (type 04), the corresponding zone supervisory LED begins flashing. The common supervisory LED and supervisory relay (supervisory relay is optional) turn on steady, and the buzzer turns on steady. If there was a trouble on that zone, the zone trouble LED turns off. The buzzer remains on until the trouble silence button is pressed. Once the buzzer is silenced any flashing zone supervisory LEDs turn on steady. The zone supervisory LEDs, common supervisory LED and supervisory relay remain on steady until a system reset is performed.

Subsequent Fire Supervisory

After silencing a fire supervisory, a subsequent fire supervisory from another zone will resound the trouble/ supervisory buzzer and the new zone supervisory LED flashes until the Silence Trouble button is pressed.

Supervisory / Trouble Priority

If a supervisory zone has a trouble and it goes into alarm, the zone trouble LED is extinguished until that zone is restored and the panel has been reset. The common trouble LED will remain on steady until all supervisory alarms have been restored and the panel reset. All other 'common' trouble indicators will operate normally.

Supervisory / Fire Alarm Priority

The supervisory zone LED, the common supervisory LED and the buzzer (in the steady supervisory mode) function normally whether there is a fire alarm present or not.

5.5 Trouble Operation

When a trouble occurs, if there is a corresponding trouble LED it turns on steady. The common trouble LED and the trouble relay also turn on. If no alarm is present on the system, the buzzer will sound at a rate of ½ second ON/OFF. The buzzer and trouble LEDs will remain on until the trouble is restored. If the Silence Trouble button is pressed, the buzzer turns off. Subsequent troubles will resound the trouble buzzer.

Note: If there is no trouble present in the system then pressing the Silence Trouble button will result in a 1 second error tone.

Please see the following table for a list of system faults that will initiate a trouble.

System Troubles

System faults	Common Trouble LED	Buzzer	Trouble Relay	Other Indicators
Alarm zone open circuit – loss of EOLR	turns on	sounds ½ second on/ off	deactivates	Zone trouble LED turns on steady
NAC open circuit or short circuit	turns on	sounds ½ second on/ off	deactivates	NAC1 or NAC2 trouble LED turns on
Battery low voltage or disconnected	turns on	sounds ½ second on/ off	deactivates	Battery LED turns on
Signals silenced - automatically	turns on	sounds ½ second on/ off	deactivates	Signals Silenced LED turns on
Ground on extended conductor	turns on	sounds ½ second on/ off	deactivates	Ground LED turns on
AC fails completely, or is low for more than 10 seconds (brownout)	turns on	sounds ½ second on/ off	deactivates	AC LED turns off
Installer Programming Mode Active	flashes	sounds ½ second on/ off	deactivates	AC LED turns off
Loss of Remote Trouble Unit	turns on	sounds ½ second on/ off	deactivates	
Loss of Remote Alarm/ Trouble Unit	turns on	sounds ½ second on/ off	deactivates	
TLM on one or both telephone lines (Dialer)	turns on	sounds ½ second on/ off	deactivates	
Failure to communicate (Dialer)	turns on	sounds ½ second on/ off	deactivates	
Unsuccessful system reset	turns on	sounds ½ second on/ off	deactivates	
Loss of Dialer module	turns on	sounds ½ second on/ off	deactivates	

5.6 System Reset Operation

To reset the system, press the 'Reset System' button. The panel will remove all power from the zones and the switched auxiliary relay for 10 seconds. During this 10 second period, the buzzer will beep twice every 2 seconds.

The panel can only be reset if:

- the NACs have been silenced
- the supervisory buzzer has been silenced
- and all waterflow zones are restored (only applies if the Silence Waterflow option is turned off - see "Silence Waterflow Alarms" on page 26).

If the panel is not in a condition to be reset, when the 'Reset System' button is pressed the panel will sound a 1 second error tone on the buzzer.

After the 10 second reset period, the panel will turn off the zone LED for any zones that have been restored. If one or more zones is still in alarm after the reset period, the panel will activate the NACs as programmed. If there are no alarms but one or more Supervisory zones is still 'off-normal' after the reset period, the panel will sound the trouble buzzer in the Supervisory mode. If there are no alarms or supervisory conditions but a trouble is present in the panel after the reset period, the panel will sound the trouble buzzer. After the reset period, LEDs for any alarms, supervisory off-normal or trouble conditions will be on.

5.7 Lamp Test

The lamp test will check all of the panel and annunciator LEDs. To do a lamp test, press and hold the Lamp Test button. All the LEDs will flash.

A lamp test will only work if the NACs are not active and the supervisory buzzer is not active. If a lamp test is unsuccessful the buzzer will sound a 1 second error tone. If any trouble or zone has a state change during lamp test, the lamp test will be cancelled and the panel will return to normal operation.

5.8 Walk Test (Installer function only)

To do a walk test, all zone alarms, troubles and relays must be in their normal state. You can program the walk test to be either audible or silent (see "Audible Walk Test" on page 26).

1. To walk test the panel press the Walk Test button. The common trouble LED flashes and the buzzer sounds one short beep. The panel will be in walk test mode for one hour, or until you press the Walk Test button again.
2. As you test each part of the system, the panel will give the following indications:

Type of activation	LEDs	NACs*	Trouble Buzzer
Fire Alarm or Fire Supervisory	Zone alarm/ Supv LED turns on	1 squawk	
Fire Alarm or Fire Supervisory Restoral	Zone alarm/ Supv LED turns off	1 squawk	
Zone or System Trouble	Zone or system trouble LED turns on	2 squawks	Sounds
Zone or System Trouble Restoral	Zone or system trouble LED turns off	2 squawks	Stops sounding
Ground Fault	Ground trouble LED turns on	3 squawks	Sounds
Ground Fault Restoral	Ground trouble LED turns off	3 squawks	Stops sounding

*Only if Walk Test Audible option is turned on.

Zone LEDs operate normally except that alarms do not latch - the alarm LEDs will turn off when the zone is restored and the auto-reset has been successful.

Alarm and trouble relays are NOT activated. If used, any remote connection is not activated.

3. To return the system to normal operation, press the Walk Test button. If you do not press the Walk Test button, the system will return to normal operation after one hour. If any zones are in alarm at the end of the walk test, the zones will indicate silenced signals.

Note: The Lamp Test button does not work while the panel is in Walk Test mode.
Walk Test Function available without AC power.

5.9 NAC operation

See also "NAC Temporal/Steady Programming - Section 1 ('NAC1' LED on steady)" on page 25, and "NAC Auto-silence and Strobe Programming - Section 2 ('NAC2' LED on steady)" on page 25 for more information.

Class 'B' operation selections:

- **Steady (default)** – On alarm the NAC will turn on steady. It will turn off on either a manual or automatic signal silence.
- **Temporal 3** – On alarm the NAC will turn on with the temporal 3 pattern and turn off on either a manual or automatic signal silence.
- **NAC2 Strobe –** On alarm NAC2 will turn on steady. It will not turn off on a manual or automatic signal silence. NAC2 set in this mode will only turn off on system reset if all zone fire alarms are restored. Only NAC2 can be set in this mode.

Class 'A' operation selections

If the panel NACs are set for class 'A' operation then there is only one NAC. In this configuration the NAC output can only be set for *steady* or *temporal* using the NAC1 programming options For class 'A', the NAC2 Strobe option is not available.

5.10 Relay Function

Alarm Relay

The panel activates the alarm relay upon any (non-supervisory) zone alarm. The panel deactivates the alarm relay upon a successful system reset.

Trouble Relay

The panel deactivates the trouble relay upon any system trouble. The panel activates the trouble relay upon the restoral of all system troubles.

Supervisory Relay (available with the MR-2602-R3 Relay Expander only)

The panel activates the supervisory relay upon any supervisory zone alarm. The panel deactivates the supervisory relay upon a successful system reset.

6.0 Programming the FA-265 System

6.1 How to Program the FA-265

You can program the panel using the controls and indicator LEDs. There are no DIP switches to set for programming.

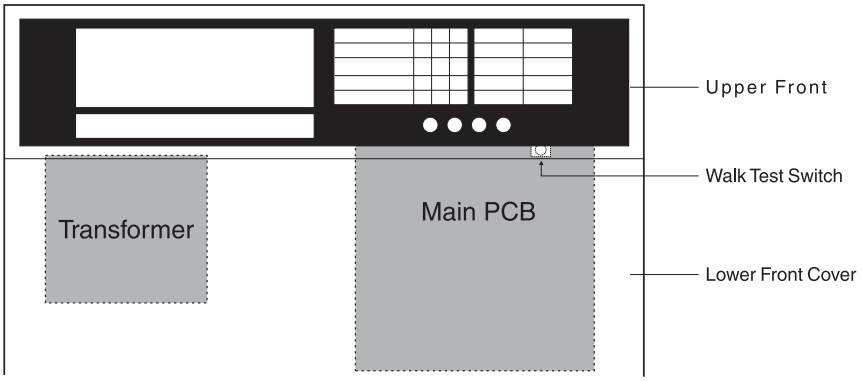
Once programmed, the operating modes selected are maintained in non-volatile memory that will retain the programmed information even if all power is removed from the panel.

Entering the Programming mode

Note: All zone alarms must be reset prior to entering the programming mode. While the panel is in programming mode, the annunciators will show a trouble condition.

1. Remove the lower front cover and locate the 'Walk Test Switch' behind the control panel PCB, as shown below.

Figure 17: Locating the Walk Test Switch



2. Press and hold the Walk Test Switch for two seconds. The common trouble buzzer and common trouble LED turn on and pulse ½ second on/off.
3. Press any button. The trouble buzzer is silent, and the zone 1 alarm LED turns on steady. The common trouble LED continues to flash.
4. The panel is now ready to program.

Programming the Panel

The control panel has six different programming sections, which are shown in the table below. The Panel Status LEDs indicate which programming section you are currently in.

Panel Status LEDs	Section 0: Zone programming	Section 1: NAC1 & NAC2 programming for Steady & Temporal	Section 2: NAC Auto-Silence and NAC2 Strobe programming	Section 3: Silence Inhibit & Walk Test programming	Section 4: Silence Waterflow programming	Section 5: 50/60 Hz	Reset Section:
NAC 1	●	○	●	●	●	●	☼
NAC 2	●	●	○	●	●	●	☼
BATTERY	●	●	●	○	●	●	☼
GROUND FAULT	●	●	●	●	○	●	☼
SIGNALS SILENCED	●	●	●	●	●	○	☼

○ = LED On ● = LED Off ☼ = LED Flashing

When you first enter programming mode, the panel will be at zone programming (section 0). Each programming section has one or more programming sub-sections (e.g. section 0 has sub-sections for zones 1 through 5). Use the **Silence Trouble** and **Silence Alarm** buttons to enter your programming choices:

1. Each sub-section in a section will have 2 or more programming settings, indicated by the panel Zone Supervisory and Zone Trouble LEDs. To scroll through the programming settings, press the **Silence Alarm** button. Please see "6.2 Programming Section Descriptions" on page 24 for descriptions of each section and settings, and the LED indications for each setting.
2. When the LEDs show the setting you want for a sub-section, move to the next programming sub-section by pressing the **Silence Trouble** button. The panel will save the indicated settings when you exit the programming mode or go to the next programming section.
3. When you have programmed all the sub-sections in a section, the panel will move to the next programming section when you press the **Silence Trouble** button.

Note: Pressing **Silence Trouble** will advance forward through each programming sub-section, and each section.

Example: in the Zone 1 programming sub-section, pressing **Silence Alarm** will scroll through each zone type setting (null zone, instant zone, auto-verify zone, etc.). When the panel shows the zone type you want for zone 1, press **Silence Trouble** to move on to Zone 2 programming.

Exiting the Programming Mode

When you come to the end of all the programming sections, press **Silence Trouble** to exit the programming mode.

To exit programming mode at any other point in the panel programming, press and hold the **Walk Test** switch for two seconds.

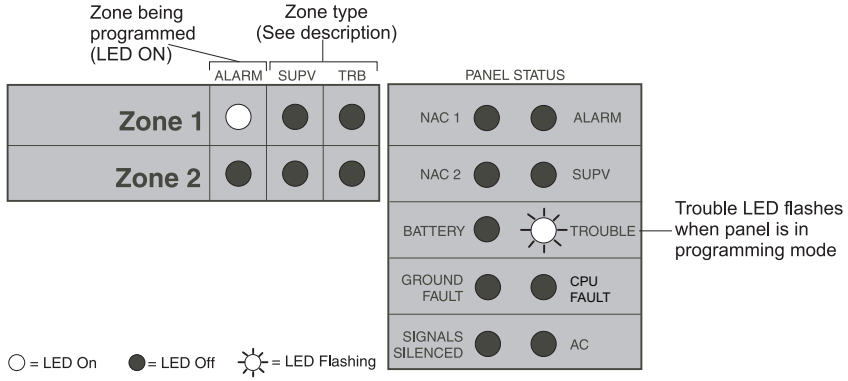
Note: If 5 minutes elapse without any button presses, the panel will automatically exit the programming mode. During the final 60 seconds before the exit, the panel will sound a warning tone on the buzzer. Press any button to cancel the auto-exit and resume programming.

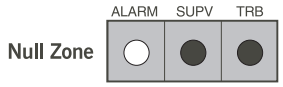
After you exit the programming mode, the panel performs a system reset for 10 seconds, during which the buzzer sounds double beeps. When the beeping stops the panel returns to normal operating mode and all programming choices are stored in memory.

6.2 Programming Section Descriptions

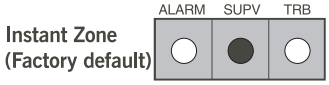
Zone Programming (Section 0)

In this zone programming section, the panel uses the zone alarm, supervisory, and trouble LEDs to indicate the programming as follows:



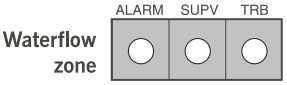


Zone type 00 – Null zone (Not used)
The zone is not used. The zone is not supervised, alarms and troubles are ignored. The end-of-line resistor is not required.



Zone type 01 – Instant alarm for 2-wire smoke detectors and contact devices
Zone type 01 does not differentiate between 2-wire smoke detectors, contact devices, or 4-wire smoke detectors. When a 2-wire smoke detector, 4 –wire smoke detector or contact device goes into alarm:

1. The panel goes into alarm without any delay. If an instant zone goes into alarm, any auto-verify sequence in progress on another zone will be immediately cancelled and both zones will indicate an alarm condition.



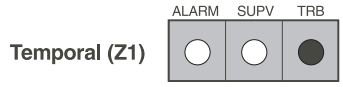
Zone type 03 – Waterflow zone
This zone type is intended for waterflow alarm initiating contact devices only. Do not mix other alarm initiating devices on this zone. For Waterflow delay, use actuating devices with a built-in delay of 30 seconds or more. The overall maximum waterflow alarm initiation delay allowed is 90 seconds. (NFPA A-5-6.2 – 1996 edition) When the contact on a Waterflow alarm initialing device is activated the control panel will go into alarm instantly.

Zone type 04 – Supervisory zone
When the contact on a Supervisory device is initiated:

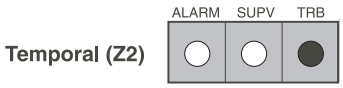
1. The control panel will immediately indicate the Supervisory "off-normal" condition.
2. The zone supervisory LED (yellow) will flash, the common 'supervisory' LED will come on steady and the common trouble buzzer will sound steadily. Pressing the 'trouble silence' switch will silence the buzzer and the zone supervisory LED will stop flashing and turn on steadily.
3. Fire supervisory zones are latching and can only be restored when the initiating device is restored and a system reset is performed.

NAC Temporal/Steady Programming - Section 1 ('NAC1' LED on steady)

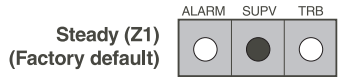
You can individually program both NAC1 and NAC2 to sound in either a temporal or steady pattern. By default, both NAC outputs are programmed as steady.



Temporal
The NAC1 will sound the Temporal/ANSI Fire Pattern: 0.5 seconds ON, 0.5 seconds OFF, 0.5 seconds ON, 0.5 seconds OFF, 0.5 seconds ON, 1.5 seconds OFF, repeat.



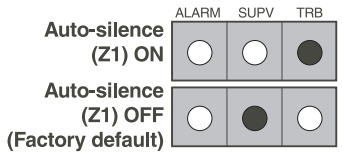
The NAC2 will sound the Temporal/ANSI Fire Pattern: 0.5 seconds ON, 0.5 seconds OFF, 0.5 seconds ON, 0.5 seconds OFF, 0.5 seconds ON, 1.5 seconds OFF, repeat.



Steady
The NAC1 will sound continuously.

The NAC2 will sound continuously.

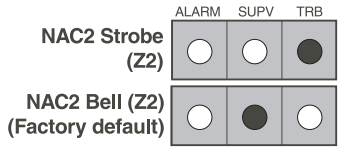
NAC Auto-silence and Strobe Programming - Section 2 ('NAC2' LED on steady)



Automatic Signal Silence
If Automatic Signal Silence is enabled, 30 minutes after the last fire alarm on the system, the panel restores the NACs to normal (alarms are silenced).

If another alarm occurs after the NACs are silenced, the panel will restart the timer for another 30 minute period.

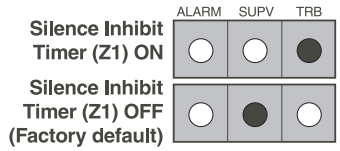
If Automatic Signal Silence is disabled, the panel will not silence the NACs automatically.



NAC2 Strobe
If this option is enabled, on alarm, NAC2 turns on steady and does not turn off on automatic signal silence, or when the Silence Alarm button is pressed. When NAC2 is set to this mode, it can only be turned off when all zone fire alarms are restored, and the system is reset. Only NAC2 can be set to this mode.

If this option is disabled, the panel will restore NAC2 to normal following an automatic signal silence (see Automatic Signal Silence, above), or following a press of the 'Silence Alarm' button.

Silence Inhibit and Walk Test Programming - Section 3 ('Battery' LED on steady)

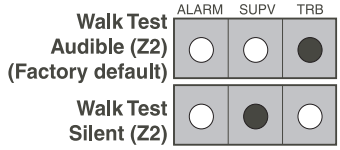


Signal Silence Inhibit Timer

If the Signal Silence Inhibit Timer is enabled, when the first alarm is activated, the panel will begin a 60 second countdown. During this 60 seconds, users will not be able to turn off the NACs by pressing the Silence Alarm button. The timer is started on the first alarm only and is not restarted on subsequent alarms.

If the Signal Silence Inhibit Timer is disabled, users will be able to turn off the NACs at any time, by pressing the Silence Alarm button.

If NAC2 is set as a strobe, users will never be able to turn off NAC2 using the Silence Alarm button. See "NAC2 Strobe" on page 28.



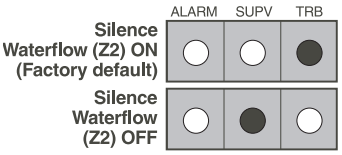
Audible Walk Test

You can set the One Man Walk Test to be either audible or silent. If the One Man Walk Test is set for audible, then the following will occur:

- On a fire or Supervisory alarm/restoral the bells will pulse ONCE
- On a zone or system trouble/restoral, except ground fault, the bells will pulse TWICE
- On any ground fault/restoral the bells will pulse THREE times.

If the One Man Walk Test is set for silent, the bells will not sound during the walk test.

Waterflow Programming - Section 4 ('Ground Fault' LED on steady)



Silence Waterflow Alarms

If the Silence Waterflow Alarms option is turned on, Waterflow zones can be silenced whether the zones are physically restored or not.

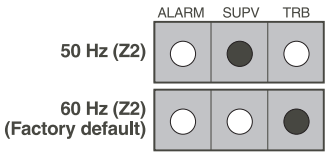
If the Silence Waterflow Alarms option is turned off, Waterflow zones cannot be silenced until they are physically restored. This applies to both automatic signal silence, and the Silence Alarm button. If there is a trouble on a Waterflow zone following the alarm and alarm restore, the zone can be silenced.

50/60 Hz Option - Section 5 ('Signals Silence' LED on steady)

50/60 Hz Option ***Reset Section Programming (All common trouble LEDs flashing)***

To Enter this Programming Section

1. Enter the installer programming mode, section 0
2. Press and hold the System Reset button for 2 seconds. The Z1 ALM LED and TRB LED will be ON and all the System Trouble LEDs will flash.

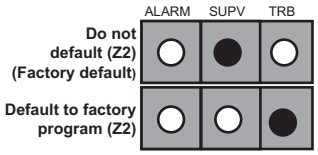


To Remove Module

Physically remove the module from the system and enter the reset section programming as described above. Press the 'Silence Alarm' button until the Z1 SUPV LED is ON. Press the 'Silence ***Trouble***' button to exit this section. Upon exit, the system will reset the 'supervision' field for all the modules currently connected to the 'secur-bus'.

To Add a Module

Just connect it to the system and it will auto-enroll within one minute.



To Default the System

Enter the reset section programming as described above. Press the 'Silence Trouble' button until the Z2 ALM LED is ON and Z2 TRB LED is ON. Press the 'Silence Alarm' button until the Z2 SUPV LED is ON. Press the 'Silence Trouble' to exit this section. Upon exit, the system will reset all of the panel programmable parameters to their factory default state. Please note that the 'supervision' field will be reset as well.

6.3 Viewing the Event Buffer

1. Enter the programming mode by pressing and holding the **Walk Test** switch for 2 seconds.
2. Press any switch. To silence the trouble buzzer and enter the **Section 0** programming.
3. Press and hold the **Lamp Test** switch for 2 seconds.
4. The Common Supervisory LED flashes to indicate the **View Buffer** mode.
5. Events are shown from the most recent to the oldest.
6. See the event table below which indicates the LED patterns used to indicate various events.
7. To advance to the next event press the **Silence Trouble** switch.
8. Once all 20 events have been viewed, the next **Silence Trouble** keypress will exit the view buffer mode and return to the Section 0 programming. To exit the programming mode, press and hold for 2 seconds the **Walk Test** switch.
9. Pressing the **Silence Signal** switch at any time will cause the system to exit the View Buffer mode. The buzzer will sound. Press any button to go to the Section 0 programming mode.

Event Buffer Table

Display	Event
Steady Common Alarm LED	Null Event
Flashing Zone X Alarm LED	Verified Zone X Alarm
Steady Zone X Alarm LED	Verified Zone X Alarm Restore
Flashing Zone X Alarm LED and Flashing Zone X Supervisory LED	Unverified Zone X Alarm
Flashing Zone X Supervisory LED	Zone X Supervisory
Steady Zone X Supervisory LED	Zone X Supervisory Restore
Flashing Zone X Trouble LED	Zone X Trouble
Steady Zone X Trouble LED	Zone X Trouble Restore
Flashing Common Trouble LED	Expansion Module Fault
Steady Common Trouble LED	Expansion Module Fault Restore
Flashing NAC1 Trouble LED	NAC 1 Trouble
Steady NAC1 Trouble LED	NAC 1 Trouble Restore
Flashing NAC2 Trouble LED	NAC 2 Trouble
Steady NAC2 Trouble LED	NAC 2 Trouble Restore
Flashing Battery Trouble LED	Battery Trouble
Steady Battery Trouble LED	Battery Trouble Restore
Flashing Ground Fault LED	Ground Fault Trouble
Steady Ground Fault LED	Ground Fault Restore
Flashing Signal Silenced Trouble LED	Manual Signal Silence
Steady Signal Silenced Trouble LED	(Successful) Reset
Flashing AC On LED	AC Failure
Steady AC On LED	AC Fail Restore
Steady AC On LED and Steady BAT TRB LED	Cold Start
Flashing AC On LED and Flashing BAT TRB LED	Warm Start
Flashing (ALL) Zone Trouble LED's	Walk Test Start / Installer Mode Entry
Steady (ALL) Zone Trouble LED's	Walk Test End / Installer Mode Exit

7.0 Startup of the FA-265

7.1 Prior to power up

•Verify that all field wiring is free of shorts, opens and grounds and that end-of-line devices are connected and are the proper value.

•Verify that all modules and internal cables are properly seated in their location.

•Verify that all metal components are bonded to the incoming ground. Should measure zero ohms between any metal part and the incoming ground wire.

•Verify that the polarity between the panel and connected devices is correct.

7.2 Power up sequence

•Connect the AC power first before battery.

•The panel goes into the Reset mode immediately. This lasts for 10 seconds and the trouble buzzer will beep during the reset period.

•After the reset period ends, the buzzer goes silent, the green AC indicator should be ON and all other LEDs should be OFF.

•If any LED other than the AC LED is ON then there is a fault in the system. Troubleshoot and repair the fault before proceeding.

•If the battery is not fully charged, the battery fault LED will come on after about 2 minutes. Verify that the battery is connected properly and if it is, it may take up to 24 hours to recharge the batteries. Once the battery is charged, the battery fault LED will go OFF.

7.3 Default Operation

•On first power up, all programmable features will be in the default mode.

•Do a 'Lamp Test' to verify that all the indicators function.

•It is suggested that an initial verification of operation be done before the panel is programmed. Verify that each zone will go into alarm and that each NAC operates the Notification Appliances and that the zone alarm indicator(s) function. Each zone is defaulted as an instant 'fire alarm' and each NAC is defaulted for 'steady' output on alarm. An Alarm, Silence, Reset cycle will also verify that the push-button function properly.

•Verify that each zone indicates a trouble on a zone open and that a ground fault on the extended conductors is properly indicated.

7.4 Programming the Panel

•Program the panel for the operational features desired. (section 6)

•Record your configuration choices for future reference. (section 8)

•Verify panel operations and feature selections by initiating alarms and troubles as described above.

7.5 Final Verification

•Verify system operation and fault detection as required by the local Authority Having Jurisdiction.

•Enable the 'one-man' walk test feature to test all the field devices and wiring.

8.0 Programming Worksheets

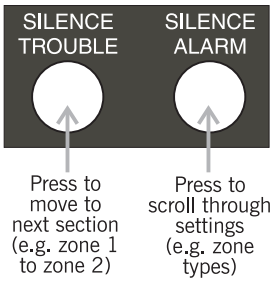
8.1 Entering Programming Mode

Please see "6.0 Programming the FA-265 System" on page 22 for complete instructions.

Note: All zone alarms must be reset prior to entering the programming mode. While the panel is in the programming mode, the annunciators will show a trouble condition.

To enter the Programming mode:

1. Press and hold the **Walk Test** button for two seconds (located behind the display PCB).
2. Press any button to turn off the trouble buzzer.
3. Press **Silence Alarm** to scroll through the settings for each programming section (e.g. to change the zone type, or to turn an option on or off).
4. Press **Silence Trouble** to move to the next programming section (e.g. to move from zone 1 to zone 2).



5. The panel will indicate the current programming section using the Common Trouble LEDs, as shown below.

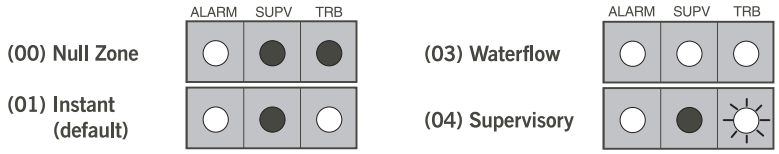
Panel Status LEDs	**Section 0:** Zone programming	**Section 1:** NAC1 & NAC2 programming for Steady & Temporal	**Section 2:** NAC Auto-Silence and NAC2 Strobe programming	**Section 3:** Silence Inhibit & Walk Test programming	**Section 4:** Silence Waterflow programming	**Section 5:** 50/60 Hz	**Reset Section:**
NAC 1	●	○	●	●	●	●	☼
NAC 2	●	●	○	●	●	●	☼
BATTERY	●	●	●	○	●	●	☼
GROUND FAULT	●	●	●	●	○	●	☼
SIGNALS SILENCED	●	●	●	●	●	○	☼

○ = LED On ● = LED Off ☼ = LED Flashing

Please see "6.2 Programming Section Descriptions" on page 24 for detailed descriptions of each programming section.

8.2 Zone Programming (Section 0)

Program each of the zones as one of the following types. (See "Zone Programming (Section 0)" on page 24.) Record your programming choices in the table below.



ZONE ALARM LED On	Zone No.	Type (00 - 05)	Label
1	1		
2	2		

8.3 NAC Temporal/Steady Programming (Section 1)

Please see "NAC Temporal/Steady Programming - Section 1 ('NAC1' LED on steady)" on page 25.

ZONE ALARM LED On	Programming Section	Settings	
		SUPV TRB	SUPV TRB
1	NAC1 Temporal / Steady	Temporal ❑	*Steady ❑
2	NAC2 Temporal / Steady	Temporal ❑	*Steady ❑

* = Factory default

8.4 NAC Auto-silence, Strobe Programming (Section 2)

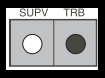
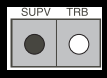
Please see "NAC Auto-silence and Strobe Programming - Section 2 ('NAC2' LED on steady)" on page 25.

ZONE ALARM LED On	Programming Section	Settings	
		SUPV TRB	SUPV TRB
1	NAC Auto-silence	Enabled ❑	*Disabled ❑
2	NAC2 Strobe or Bell	Strobe ❑	*Bell ❑

* = Factory default

8.5 Silence Inhibit and Walk Test Programming (Section 3)

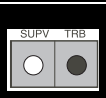
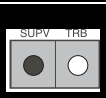
Please see "Silence Inhibit and Walk Test Programming - Section 3 ('Battery' LED on steady)" on page 26.

ZONE ALARM LED On	Programming Section	Settings	
			
1	Signal Silence Inhibit Timer	Enabled ❑	*Disabled ❑
2	One Man Walk Test	*Audible ❑	Silent ❑

* = Factory default

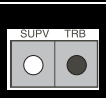
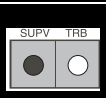
8.6 Waterflow Programming (Section 4)

Please see "Waterflow Programming - Section 4 ('Ground Fault' LED on steady)" on page 26.

ZONE ALARM LED On	Programming Section	Settings	
			
1	Silencing of Waterflow Alarms	*Enabled ❑	Disabled ❑

* = Factory default

8.7 50/60 Hz Option (Section 5)

ZONE ALARM LED On	Programming Section	Settings	
			
1	AC power 50Hz or 60Hz	*60Hz ❑	50Hz ❑

* = Factory default

9.0 Appendix: Table of Compatible Smoke Detectors

Panel CID	Max. # Detectors	Manufacturer	Model	Model CID	Base	Base CID	Description
01	25	System Sensor	1400/ 1400A	A	N/A	N/A	Ionization type smoke, 2-wire 12/24VDC
01	25	System Sensor	1451	A	B401 B401B	N/A	Plug-in – Ionization type smoke detector
01	25	System Sensor	2400	A	N/A	N/A	Photoelectric, 2-wire, 12/24VDC
01	25	System Sensor	2400TH	A	N/A	N/A	Photoelectric with Thermal, 2-wire, 12/24VDC
01	25	System Sensor	2400AT	A	N/A	N/A	Photoelectric with Thermal and Horn, 2-wire, 24VDC
01	25	System Sensor	2400AIT	A	N/A	N/A	Photoelectric with isolated Thermal and Horn, 2-wire, 24VDC
01	25	System Sensor	2451	A	B401 B401B DH400	N/A	Plug-in – Photoelectric type smoke detector
01	25	System Sensor	2451TH	A	B401 B401B	N/A	Plug-in – Photoelectric type smoke detector with Thermal
01	25	System Sensor	1100	A	N/A	N/A	Ionization, 2-wire, 12/24VDC, terminal strip
01	25	System Sensor	2100	A	N/A	N/A	Photoelectric, 2-wire, 12/ 24VDC, terminal strip
01	25	System Sensor	2100T	A	N/A	N/A	Photoelectric, 2-wire, 12/ 24VDC, thermistor, terminal strip

Panel CID	Max. # Detectors	Manufacturer	Model	Model CID	Base	Base CID	Description
01	25	System Sensor	2112/24T	A	N/A	N/A	Photoelectric, 12/24VDC, terminal strip
01	25	System Sensor	4451HT 4451HTA	A	B401 B401B DH400	N/A	Plug-in – High Temp Heat 88°C (190°F)
01	25	System Sensor	5451	A	B401 B401B DH400	N/A	Plug-in – Fixed Temp/Rate of Rise Detector
01	25	System Sensor	1151 1151A	A	B401 B401B DH400	N/A	Plug-in – Low Profile Ion
01	25	System Sensor	2151 2151A	A	B401 B401B DH400	N/A	Plug-in – Low Profile Photo
01	25	System Sensor	2100S	A	N/A	N/A	2-wire direct wire Photoelectric
01	25	System Sensor	2100TS	A	N/A	N/A	2-wire direct wire Photoelectric Thermal
01	30	System Sensor	2100AT	A	N/A	N/A	2-wire direct wire Photoelectric Audible Thermal
01	30	System Sensor	2100TR	A	N/A	N/A	2-wire direct wire Photoelectric Thermal Auxiliary Relay

9.1 Smoke Detector Bases

Max. # Detectors	Manufacturer	Model	Base CID	Description
25	System Sensor	B401	N/A	2-wire standard base, 4", 12/24VDC
25	System Sensor	B401B	N/A	2-wire standard base, 6", 12/24VDC
25	System Sensor	B406B	N/A	2-wire base, 24VDC, form contact
25	System Sensor	B401BH	N/A	24VDC sounder base for use with B401
25	System Sensor	B110LP	N/A	2-wire, flangeless, 12/24VDC
25	System Sensor	B116LP	N/A	2-wire base, 24VDC, form contact
25	System Sensor	DH400	N/A	Duct Detector Mount
25	System Sensor	RMK400	N/A	Recessed mount kit for Series 400

9.2 Compatible 4-Wire Smoke Detectors

Manufacturer	Models					
System Sensor	1124B	2124B	2124TB	2124S	2124TS	2124R
	2124TR	2124AT	2124ATR	2124AITR	1424	2424
	2424TH	2424AT	1151*	2151*	-	-
	2424AIT	6424	1451**	2451**	22451TH**	-
	*Detector with B112LP Base **Detector with B402B Base					
Detection Systems	DS284	DS284TH	DS284THS	DS284THR	DS284THSR	DS284THCS
	DS284THC	DS284THE	DS284ES	DS284IS	-	-
Gentex	8240	8240T	8240P	8243P	8240PH	8243PH
	8240PT	8243PT	-	-	-	-
Hochiki	SIJ-24	SLR-24	SLR-24H	SLR-835B	-	-
DSC	MN240	MN240T	MN240R	MN240RT	MN240S	MN240ST
	MN240SR	MN240SRT	-	-	-	-
ESL	741U	741UT	-	-	-	-

9.3 Compatible Horns/Strobes

System Sensor	Type	Cd	Voltage (FWR)
P2415(W)(A)	H/S	15	20-30
P241575(W)(A)	H/S	15/75	20-30
P2475(W)(A)	H/S	75	20-30
P24110(W)(A)	H/S	110	20-30
S2415(W)(A)	S	15	20-30
S241575(W)(A)	S	15/75	20-30
S2475(W)(A)	S	75	20-30
S24110(W)(A)	S	110	20-30
H24(W)(A)	H	-	20-30
MDL(W)(A)	Module	-	20-30
No suffix = Red, suffix W = White, suffix A = Canadian version			

Gentex	Type	Cd	Voltage (FWR)
GEH24	H	-	20-31
GES24-15	S	15	20-31
GES24-15/75	S	15/75	20-31
GES24-30	S	30	20-31
GES24-60	S	60	20-31
GES24-75	S	75	20-31
GES24-110	S	110	20-31
GEC24-15	H/S	15	20-31
GEC24-15/75	H/S	15/75	20-31
GEC24-30	H/S	30	20-31
GEC24-60	H/S	60	20-31
GEC24-75	H/S	75	20-31
GEC24-110	H/S	110	20-31
Available in Red and White.			

Wheelock	Type	Cd	Voltage (FWR)
NS-2415W-FR(W)	H/S	15	20-31
NS-241575W-FR(W)	H/S	15/75	20-31
NS-2430W-FR(W)	H/S	30	20-31
NS-2475W-FR(W)	H/S	75	20-31
NS-24110W-FR(W)	H/S	110	20-31
NS4-2415W-FR(W)	H/S	15	20-31
NS4-241575W-FR(W)	H/S	15/75	20-31
NS4-2430W-FR(W)	H/S	30	20-31
NS4-2475W-FR(W)	H/S	75	20-31
NS4-24110W-FR(W)	H/S	110	20-31
NS = 2-wire, NS4 = 4-wire			
AS-2415W-FR(W)	S	15	20-31
AS-241575W-FR(W)	S	15/75	20-31
AS-2430W-FR(W)	S	30	20-31
AS-2475W-FR(W)	S	75	20-31
AS-24110W-FR(W)	S	110	20-31
AS4-2415C-FR(W)	S	15	20-31
AS4-2430C-FR(W)	S	30	20-31
AS4-2475C-FR(W)	S	75	20-31
AS4-24110C-FR(W)	S	110	20-31
AH-24-R	H	-	20-31
AH-24-WP-R	H	-	20-31
MT-24-R	H		20-31
MT4-24-R	H		20-31
MT-24-SL-VFR	H/S	15	20-31
MT-24-SLM-VFR	H/S	15/75	20-31
MT-24-MS-VFR	H/S	30	20-31
MT-24-IS-VFR	H/S	75	20-31
MT-24-WM-VFR	H/S	117	20-31

FCC Compliance Statement

CAUTION: Changes or modifications not expressly approved by the manufacturer could void your authority to use this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the FCC useful: "How to Identify and Resolve Radio/ Television Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock # 004-000-00345-4.

Warranty & Warning Information

Warning Please Read Carefully

Note to End Users: This equipment is subject to terms and conditions of sale as follows:

Note to Installers

This warning contains vital information. As the only individual in contact with system users, it is your responsibility to bring each item in this warning to the attention of the users of this system. Failure to properly inform system end-users of the circumstances in which the system might fail may result in over-reliance upon the system. As a result, it is imperative that you properly inform each customer for whom you install the system of the possible forms of failure.

System Failures

This system has been carefully designed to be as effective as possible. There are circumstances, such as fire or other types of emergencies where it may not provide protection. Alarm systems of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons. Some reasons for system failure include:

•*Inadequate Installation*

A Fire Alarm system must be installed in accordance with all the applicable codes and standards in order to provide adequate protection. An inspection and approval of the initial installation, or, after any changes to the system, must be conducted by the Local Authority Having Jurisdiction. Such inspections ensure installation has been carried out properly.

•*Power Failure*

Control units, smoke detectors and many other connected devices require an adequate power supply for proper operation. If the system or any device connected to the system operates from batteries, it is possible for the batteries to fail. Even if the batteries have not failed, they must be fully charged, in good condition and installed correctly. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage electronic equipment such as a fire alarm system. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.

•*Failure of Replaceable Batteries*

Systems with wireless transmitters have been designed to provide several years of battery life under normal conditions. The expected battery life is a function of the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. While each transmitting device has a low battery monitor which identifies when the batteries need to be replaced, this monitor may fail to operate as expected. Regular testing and maintenance will keep the system in good operating condition.

•*Compromise of Radio Frequency (Wireless) Devices*

Signals may not reach the receiver under all circumstances which could include metal objects placed on or near the radio path or deliberate jamming or other inadvertent radio signal interference.

•*System Users*

A user may not be able to operate a panic or emergency switch possibly due to permanent or temporary physical disability, inability to reach the device in time, or unfamiliarity with the correct operation. It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm.

•*Automatic Alarm Initiating Devices*

Smoke detectors, heat detectors and other alarm initiating devices that are a part of this system may not properly detect a fire condition or signal the control panel to alert occupants of a fire condition for a number of

reasons, such as: the smoke detectors or heat detector may have been improperly installed or positioned; smoke or heat may not be able to reach the alarm initiating device, such as when the fire is in a chimney, walls or roofs, or on the other side of closed doors; and, smoke and heat detectors may not detect smoke or heat from fires on another level of the residence or building.

•*Software*

Most Mircom products contain software. With respect to those products, Mircom does not warranty that the operation of the software will be uninterrupted or error-free or that the software will meet any other standard of performance, or that the functions or performance of the software will meet the user's requirements. Mircom shall not be liable for any delays, breakdowns, interruptions, loss, destruction, alteration or other problems in the use of a product arising our of, or caused by, the software.

Every fire is different in the amount and rate at which smoke and heat are generated. Smoke detectors cannot sense all types of fires equally well. Smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches or arson.

Even if the smoke detector or heat detector operates as intended, there may be circumstances when there is insufficient warning to allow all occupants to escape in time to avoid injury or death.

•*Alarm Notification Appliances*

Alarm Notification Appliances such as sirens, bells, horns, or strobes may not warn people or waken someone sleeping if there is an intervening wall or door. If notification appliances are located on a different level of the residence or premise, then it is less likely that the occupants will be alerted or awakened. Audible notification appliances may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners or other appliances, or passing traffic. Audible notification appliances, however loud, may not be heard by a hearing-impaired person.

•*Telephone Lines*

If telephone lines are used to transmit alarms, they may be out of service or busy for certain periods of time. Also the telephone lines may be compromised by such things as criminal tampering, local construction, storms or earthquakes.

•*Insufficient Time*

There may be circumstances when the system will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time enough to protect the occupants or their belongings.

•*Component Failure*

Although every effort has been made to make this system as reliable as possible, the system may fail to function as intended due to the failure of a component.

•*Inadequate Testing*

Most problems that would prevent an alarm system from operating as intended can be discovered by regular testing and maintenance. The complete system should be tested as required by national standards and the Local Authority Having Jurisdiction and immediately after a fire, storm, earthquake, accident, or any kind of construction activity inside or outside the premises. The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

•*Security and Insurance*

Regardless of its capabilities, an alarm system is not a substitute for property or life insurance. An alarm system also is not a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation.

IMPORTANT NOTE: End-users of the system must take care to ensure that the system, batteries, telephone lines, etc. are tested and examined on a regular basis to ensure the minimization of system failure.

Limited Warranty

Mircom Technologies Ltd. warrants the original purchaser that for a period of two years from the date of manufacture, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Mircom Technologies Ltd. shall, at its option, repair or replace any defective product upon return of the product to its factory, at no charge for labor and materials. Any replacement and/or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. The original owner must promptly notify Mircom Technologies Ltd. in writing that there is defect in material or workmanship, such written notice to be received in all events prior to expiration of the warranty period.

International Warranty

The warranty for international customers is the same as for any customer within Canada and the United States, with the exception that Mircom Technologies Ltd. shall not be responsible for any customs fees, taxes, or VAT that may be due.

Conditions to Void Warranty

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

•damage incurred in shipping or handling;

•damage caused by disaster such as fire, flood, wind, earthquake or lightning;

•damage due to causes beyond the control of Mircom Technologies Ltd. such as excessive voltage, mechanical shock or

•water damage;

•damage caused by unauthorized attachment, alterations, modifications or foreign objects;

•damage caused by peripherals (unless such peripherals were supplied by Mircom Technologies Ltd.);

•defects caused by failure to provide a suitable installation environment for the products;

•damage caused by use of the products for purposes other than those for which it was designed;

•damage from improper maintenance;

•damage arising out of any other abuse, mishandling or improper application of the products.

Warranty Procedure

To obtain service under this warranty, please return the item(s) in question to the point of purchase. All authorized distributors and dealers have a warranty program. Anyone returning goods to Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained. NOTE: Unless specific pre-authorization in writing is obtained from Summit management, no credits will be issued for custom fabricated products or parts or for complete fire alarm system. Summit will at its sole option, repair or replace parts under warranty. Advance replacements for such items must be purchased.

Note: Mircom Technologies Ltd.'s liability for failure to repair the product under this warranty after a reasonable number of attempts will be limited to a replacement of the product, as the exclusive remedy for breach of warranty.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose) And of all other obligations or liabilities on the part of Mircom Technologies Ltd. neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product. This disclaimer of warranties and limited warranty are governed by the laws of the province of Ontario, Canada.

Out of Warranty Repairs

Mircom Technologies Ltd. will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to Mircom Technologies Ltd. must first obtain an authorization number. Mircom Technologies Ltd. will not accept any shipment whatsoever for which prior authorization has not been obtained.

Products which Mircom Technologies Ltd. determines to be repairable will be repaired and returned. A set fee which Mircom Technologies Ltd. has predetermined and which may be revised from time to time, will be charged for each unit repaired.

Products which Mircom Technologies Ltd. determines not to be repairable will be replaced by the nearest equivalent product available at that time. The current market price of the replacement product will be charged for each replacement unit.

WARNING: Mircom Technologies Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

NOTE: Under no circumstances shall Mircom Technologies Ltd. be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

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MIRCOM®
Advanced Life Safety Solutions

Canada
25 Interchange Way
Vaughan, ON L4K 5W3
Tel: 905-660-4655 Fax: 905-660-4113

U.S.A.
60 Industrial Parkway PMB 278
Cheektowaga, NY 14227
Tel: 1-888-660-4655 Fax: 1-888-660-4113

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